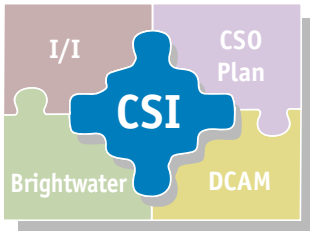
Conveyance System Improvements
CSI PROJECT
Winter 2001
KING COUNTY • WASTEWATER TREATMENT DIVISION

What is the Conveyance System Improvements Project?

King County is responsible for conveying and treating wastewater collected by 35 local sewer agencies in the King County region. The County has a multi-year multidisciplinary effort called the Conveyance System Improvements (CSI) project. This project focuses on upgrading and improving the existing regional conveyance system level of service as well as planning for future conveyance extensions. The County' s regional conveyance system consists of interceptor sewers, pump stations, forcemains, regulators, and tunnels that transport wastewater from local sewer systems to the County's two regional secondary treatment plants. The CSI project integrates with other King County programs including the Infiltration/Inflow (I/I) Control Program, the Brightwater Treatment Plant, the Combined Sewer Overflow (CSO) Program, and the Design, Construction and Asset Management Program (DCAM).



The CSI Project integrates with other related project efforts.

Brightwater Treatment Plant

CSI INTEGRATES WITH...

Regional Wastewater Services Plan and Brightwater Treatment Plant

In November 1999, the Metropolitan King County Council adopted the Regional Wastewater Services Plan (RWSP). The RWSP is the policy basis for a $1.2 billion capital improvement program that will provide wastewater services to this region for the next 30 years. The $1.2 billion RWSP includes construction of a new treatment plant and its related conveyance system, combined sewer overflow corrections, infiltration and inflow improvements, a pilot program for water reuse, and the CSI project.

King County will provide additional treatment capacity by constructing a new Brightwater Treatment Plant in the north service area, and later expanding the South Treatment Plant to handle additional flows from south and east King County.

King County is currently involved in a three-year effort to find a site for the new Brightwater Treatment Facility in northern King County or southern Snohomish County. Last summer, community leaders, wastewater agencies, and the general public took advantage of a number of opportunities to help shape the siting criteria. The siting criteria will be used to help guide the evaluation and comparison of potential sites for the new treatment plant. The King County Council is scheduled to adopt the siting criteria by February 2001. Potential sites will be identified by mid-2001, a draft environmental impact statement will be issued by mid-2002, and the King County Executive will select a preferred plant location by December 2002.

In direct support of the RWSP, the CSI team is currently working on two major improvements to the conveyance system:

- New and upgraded pipes and pump stations in the north service area; and
- The proposed North Lake Interceptor Tunnel, that will initially provide 10 million gallons of storage and eventually

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be part of a system to convey flow from the County's McAleer/Lyon Trunk to the new Brightwater Treatment Plant.

New and upgraded pipes and pump stations will be needed to convey wastewater from the east and north service areas to the new Brightwater Treatment Plant. The CSI team will be working with the Brightwater team to estimate future flows, to develop flow management strategies, and to define new and upgraded facility requirements. Key features of the potential conveyance system improvements are shown in Figure 1. The York Pump Station (which now pumps wastewater to the South Treatment Plant) will be modified so it can also pump wastewater north to the Brightwater Treatment Plant. From the York Pump Station, the wastewater will flow through the newly constructed North Creek forcemain to the North Creek Pump Station, and from there to a new pump station. New conveyance lines will be constructed between the new pump station and the Brightwater Treatment Plant.

The CSI team is also working on the proposed North Lake Interceptor, a tunnel that will initially provide up to 10 million gallons of storage and eventually will be part of a system to convey flow from the County's McAleer/Lyon Trunk to the new Brightwater Treatment Plant. The CSI team is working with the

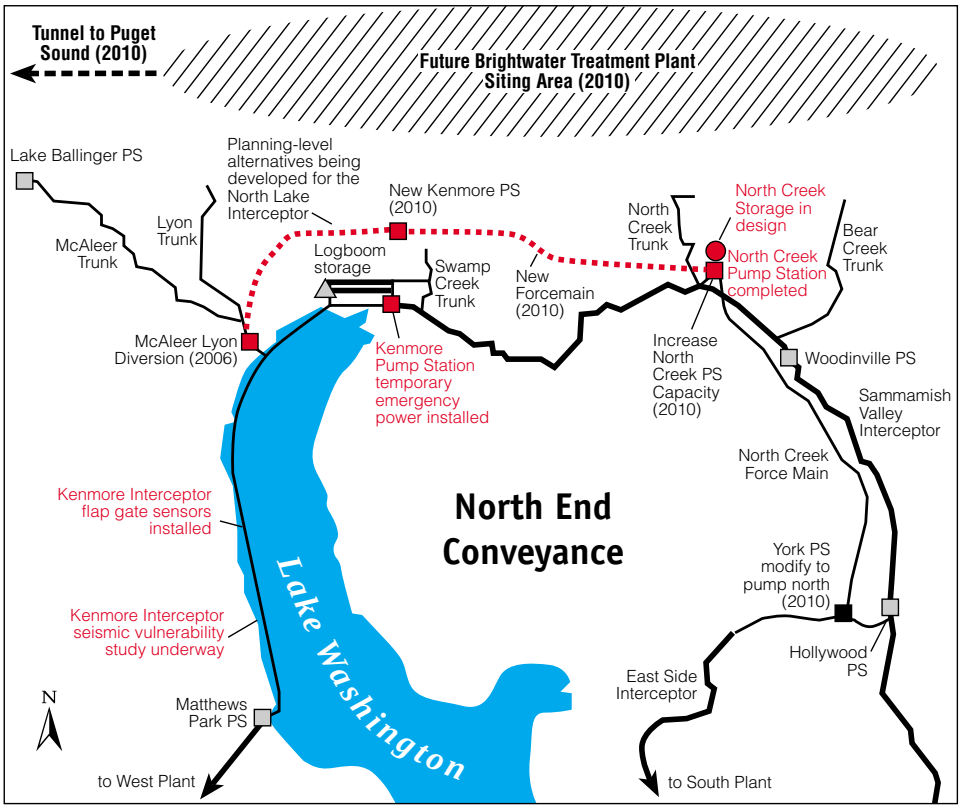

FIGURE 1: North End Conveyance Improvements

Brightwater team to coordinate conveyance planning and siting activities.

The CSI project will also implement a number of conveyance improvements to provide the additional capacity needed to serve population growth in the smaller basins served by King County. For example, the CSI team has completed planning for the Hidden Lake basin and initiated planning for several other basins and projects (see article, page 3).

During RWSP implementation, the CSI team will periodically evaluate assumptions used to forecast regional population growth and development patterns so that conveyance facilities are properly sized. The CSI project will integrate other factors into the planning process, including water reuse planning, water conservation, demand management, and the results of the regional infiltration/inflow assessment. The CSI project's efforts will provide the wastewater

Conveyance System Improvements (CSI) Project
Major Milestones and Decision Points

2001				2002				
Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**
South Lake Sammamish planning completed South Green River projects to predesign	North Green River planning completed South lake Sammamish projects to predesign	North Green River projects to predesign	NW Lake Washington planning completed	South Lake Washington planning completed NW Lake Washington projects to predesign North Lake Washington planning completed	South Lake Washington projects to predesign	SE Lake Washington planning completed North lake Washington projects to predesign	North Lake Sammamish planning completed	SE Lake Washington projects to predesign

system with the flexibility to respond to population growth and regulatory requirements, to maximize the public's investment in the existing wastewater system, and to minimize impacts on ratepayers.

CSI Project Progress to Date

Wastewater Basin Planning Wastewater basin planning is underway in several of the County's larger regional basins. Coordination continues with local agencies in the Mill Creek and South/Central Green River Basins in south King County to identify working alternatives for needed wastewater facility improvements while coordinating with local system development. The working alternative thus far includes paralleling the existing Auburn Interceptor Sections 1, 2, and 3 by diverting flow to a new large pipeline along the west side of the Green River Valley. Under discussion are working alternatives in the Soos Creek planning area that include new pump stations and possible use of some local facilities as regional facilities by the County.

King County completed an initial examination of issues and alternatives for improvements to the conveyance system and pump stations in the South Lake Sammamish planning area. Information is being gathered for further evaluation of these alternatives.

Wastewater basin planning is also underway in the County's North Green River and North Lake Washington planning areas. During this planning stage, the County will define existing system conditions and assess alternatives for improving the regional conveyance system serving these areas.

York Pump Station

Project-Specific Planning King County worked closely with the City of Bellevue to select a working alternative to divert excess flows from the County's Sweyolocken Pump Station, where capacity is limited, toward the regional Eastside Interceptor. An upgrade of the County's Bellevue Pump Station and a new 5,500 foot-long forcemain from the pump station to the Eastside Interceptor are proposed. A predesign consultant will be selected in early 2001.

Planning has begun to upgrade portions of the Tukwila Interceptor and Tukwila Freeway Crossing under the I-5/I-405 freeway near Tukwila. Issues remaining to be resolved prior to predesign include general routing, capacity needs, and project constructability.

Planning was completed for the Pacific Pump Station in south King County. The working alternative recommended for predesign consists of construction of a new 6 million gallons per day pump station at an alternative site, possibly a new force main, and a permanent generator to provide dedicated backup power supply. A predesign consultant was selected in late 2000 and notice to proceed on predesign is expected in the first quarter of 2001.

Consultation continues with the Ronald Sewer District (formerly the Shoreline Wastewater Management District) and the City of Shoreline for predesign and design to upgrade the Hidden Lake Pump Station and sections of the Boeing Creek Trunk. The selected working alternative to reduce the number of storm related overflows includes three elements: (1) retrofitting or replacing the existing Hidden Lake Pump Station; (2) paralleling or replacing approximately 6,400 lineal feet of the Boeing Creek Trunk where restrictions have reduced pipe capacity; and (3) constructing approximately 500,000 gallons of storage upstream of the Hidden Lake Pump Station.

Next Steps The CSI project schedule and milestones are shown in the bar at the bottom of page two. This CSI project schedule indicates projected dates of completion of the basin plans. After the plans are completed, projects are then implemented by the Design, Construction and Asset Management teams. The CSI project schedule is subject to change, as the CSI team addresses the many issues with flow management.

2003		
Q2	**Q3**	**Q4**
North Lake Sammamish projects to predesign	Final summary reports	CSI contract completed

Local Sewer Agency Involvement is Key

Local sewer agencies are an important part of the CSI project. The County appreciates and encourages local sewer agency involvement as planning in the wastewater service area moves forward. All final CSI project planning reports are available at the King County web site ***http://dnr.metrokc.gov/wtd/csi***. CD-ROM copies are also available on request.

More Information?

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VISIT OUR WEBSITE AT http://dnr.metrokc.gov/wtd/csi

This information is available in accessible formats on request at (206) 684-1280.

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Department of Natural Resources

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